

STATE OF ALASKA

Bill Sheffield, Governor

Annual Performance Report for

TONGASS LAND MANAGEMENT PLAN; DATA BASE DEVELOPMENT

by

Mark W. Schwan

ALASKA DEPARTMENT OF FISH AND GAME
Don W. Collinsworth, Commissioner

DIVISION OF SPORT FISH
E. Richard Logan, Director

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RESEARCH PROJECT SEGMENT

State: Alaska

Name: Sport Fish
Investigations
of Alaska

Project: F-10-1

Study: S-1

Study Title: A STUDY OF LAND USE
ACTIVITIES AND THEIR
RELATIONSHIP TO THE
SPORT FISH RESOURCES
IN ALASKA

Job: S-1-2B

Job Title: Tongass Land Manage-
ment Plan; Data Base
Development

Cooperator: Mark W. Schwan

Period Covered: 1 July 1985 to 30 June 1986

ABSTRACT

The sport fisheries computer data base was expanded to include regional information on lake and stream stocking, sport-fishing effort and the harvest estimates generated from the Statewide Harvest Survey, as well as fisheries ratings of all management units within the Tongass National Forest. More lakes and streams were added to the general inventory file, and other data sets were organized for future keypunching. Numerous dBase-III application programs were written for easy access and operation of the data base. These programs included screen menu generators, customized screens for data entry and file editing, and a wide variety of programs for retrieving data in desired summary outputs.

The Alaska National Interest Lands Conservation Act, section 706 (b), report on the effects of logging on fish resources was finalized. Assistance was also given to the Habitat Division in their publication of an overview of fish and wildlife use in southeast Alaska.

KEY WORDS

Tongass, Tongass Land Management Plan, TLMP, Alaska National Interest Lands Conservation Act, ANILCA, Sport Fish, planning, 706(b), U.S. Forest Service, habitat, logging, data base, inventory, lakes, streams, stocking, southeast Alaska, fisheries.

BACKGROUND

The Tongass Land Management Plan (TLMP) will be revised in 1989. This plan, which directs the management for most of southeast Alaska's fisheries habitat, is crucial to the future of the region's fisheries resources.

When the Alaska National Interest Lands Conservation Act (ANILCA) was passed in 1980, one of its most controversial sections was the national forest timber utilization program (Section 705). It was specified therein that the Secretary of the Treasury shall make available to the Secretary of Agriculture the sum of \$40 million annually, or as much as the Secretary of Agriculture deems necessary, to maintain a timber supply from the Tongass National Forest to dependent industry at a rate of 4.5 billion board feet per decade.

Section 706(b) of ANILCA required that within 5 years, the U.S. Forest Service (USFS), in cooperation with the State of Alaska, affected Native corporations, the southeast Alaska timber industry, the Southeast Alaska Conservation Council, and the Alaska Land Use Council, prepare a report to Congress on the status of the Tongass National Forest. In 1984 the Regional Forester recommended that cooperating agencies and organizations would be wise to prepare their own documents in response to the 706(b) mandate, in lieu of solely attempting to shape the USFS report to their liking. The Alaska Department of Fish and Game (ADF&G) decided to do just that. This resulted in the publication of a technical report dealing with the fish and wildlife issues related to timber management on the Tongass National Forest.

Given the increasing planning activities within and outside of the Department and especially given the upcoming revision of TLMP, the Region I Sport Fish staff felt it was critical that fisheries data be better organized and a computerized data base system developed to allow rapid and more complete participation in regional planning efforts. The early efforts of this activity were reported in last year's progress report.

Table 1 lists the common names, scientific names, and abbreviations for each fish species mentioned in this report.

RECOMMENDATIONS

Management

1. Develop a departmental comprehensive recreational fisheries plan for southeast Alaska.

Research

1. Continue to develop a computerized stream and lake data base.

Table 1. List of Common Names, Scientific Names, and Abbreviations.

Common Name	Scientific Name and Author	Abbreviation
Pink salmon	<i>Oncorhynchus gorbuscha</i> (Walbaum)	PS
Chinook salmon	<i>Oncorhynchus tshawytscha</i> (Walbaum)	KS
Chum salmon	<i>Oncorhynchus keta</i> (Walbaum)	CS
Coho salmon	<i>Oncorhynchus kisutch</i> (Walbaum)	SS
Sockeye salmon	<i>Oncorhynchus nerka</i> (Walbaum)	RS
Kokanee	<i>Oncorhynchus nerka</i> (Walbaum)	KO
Dolly Varden char	<i>Salvelinus malma</i> (Walbaum)	DV
Rainbow trout	<i>Salmo gairdneri</i> (Richardson)	RB
Steelhead trout	<i>Salmo gairdneri</i> (Richardson)	SH
Cutthroat trout	<i>Salmo clarki</i> (Richardson)	CT
Brook trout	<i>Salvelinus fontinalis</i> (Mitchell)	BT
Arctic grayling	<i>Thymallus arcticus</i> (Pallas)	GR

OBJECTIVES

1. Develop a computerized data base for more than 1,000 of the most important sport fishing lakes and streams in southeast Alaska.
2. To participate in multiple-agency planning activities, including review of documents and attendance of meetings, in order to identify and protect sport fish resources and sport fisheries in southeast Alaska.

TECHNIQUES USED

Data Base

Additional streams and lakes were added to the general inventory data base. Value comparison unit (VCU) ratings, stocking data, and southeast Alaska harvest estimates were added to the data base. Data were organized into sequential formats for key punching. Text editors were used for data entry onto an IBM PC-XT microcomputer hard disc. Large data files, such as the Southeast sport-harvest data, were coded on paper and key punched to an 8-in floppy diskette by Woolf and Associates. These data were put on the State's mainframe IBM computer and downloaded to the micro computer. All data files were backed up on floppy diskettes (See Appendices A, B, C, and D). Programs were written in BASICA and dBASE III for development of an integrated menu-driven data-base system (See Appendices E, F, G, H, and I).

TLMP Coordination

Virtually all efforts related to this activity were directed toward the completion of the Department's report on the effects of logging on fish and wildlife. Marilyn J. Sigman, Habitat Biologist, was responsible for compiling and producing the final draft of this report.

Habitat Division prepared another report, an overview of the uses of fish and wildlife resources in southeast Alaska. This project leader was the principal supplier and reviewer of sport fisheries information included therein.

FINDINGS

Data Base

Sequentially and randomly formatted data files, in ASCII, were used to store data. There are currently four major files: (1) a general inventory file; (2) a historical stocking file; (3) the Southeast sport fish harvest data from the Statewide Harvest Survey; and (4) a file with Tongass National Forest management VCU rated for fisheries and fisheries values.

File structures are as follows:

1. General Inventory File: 22 fields. These fields include name of water; map reference; latitude; longitude; VCU; LUD; anadromous stream number; code for water type; presence or absence of chinook, coho, sockeye, pink and chum salmon, cutthroat, rainbow, steelhead and brook trout, Dolly Varden, kokanee, and grayling; presence or absence of USFS cabins; and record number. (See Appendix A.)
2. Stocking File: 10 fields. These fields include name of water; latitude; longitude; date stocked; species stocked; size of fish stocked; number of fish stocked; source of the fish used; and whether or not the stocking was successful. (See Appendix B.)
3. Statewide Harvest Data for Southeast Alaska: 23 fields. These fields include year; area; water type; locality; estimated fishing effort; harvest estimates for chinook, coho, sockeye, pink, and chum salmon, cutthroat, rainbow, steelhead, and brook trout, kokanee, Dolly Varden, grayling, smelt, rockfishes, other fish, and razor clams. (See Appendix C.)
4. VCU Rating File: four fields. These fields include VCU number; LUD designation; score of fisheries values; and score of fisheries and wildlife values combined (VCU class 1, 2, or 3). (See Appendix D.)

Menu-driven software has been written in the BASIC programming language for general accessing of information by the regional office Sport Fish staff. The program is interactive with the person at the keyboard; that is, it accepts instructions and information from the keyboard to direct the programs for accessing desired information.

The general inventory file contains nearly 400 lakes and all the known steelhead and sea-run cutthroat streams in Southeast. The only other running waters in the data base are urban systems or important sport fish systems, even though they might not contain steelhead or cutthroat. Examples of such systems would be Switzer Creek near Juneau and the Chilkoot River near Haines. More streams will be added, based on the above criteria.

The approximate number of adult fishes populating rivers and lakes listed in the data base have been determined, where possible, and will soon be put into the computer. The species included are chinook and coho salmon; cutthroat, steelhead, rainbow, and brook trout; and grayling. Where true estimates or counts have been performed, these data will be used; however, where no quantified data exist, the area biologists will make objective judgements on how many fish they believe are in specific systems. The origin of the population numbers will be indicated in the file.

There are problems with the data base in the BASIC accessing format: (1) program run times are relatively long; (2) modifying programs is a

lengthy process; and (3) file maintenance is better done with other software specializing in text editing. Because of these factors, the data base system is loosely integrated, and other than for accessing information, it is very difficult to use.

Therefore, BASICA programs are being replaced with application programs in the dBase-III language for development of a more complete, integrated data-base system. Programs are being written for file maintenance as well as for accessing information. All components of the system will be accessible through a common menu of options; dBase III also operates much faster than BASICA, reducing search times required to locate data.

TLMP Coordination

All efforts to organize sport fisheries data can be viewed as a preliminary step toward active participation in the TLMP revision process. However, ADF&G has yet to begin an active role of participation with USFS, mostly because USFS has not asked ADF&G to participate.

The major activities regarding interagency land-use planning centered around the Department's publication of a major technical report on the impacts of clearcut logging on the fish and wildlife resources of southeast Alaska; this report is the Department's response, or contribution, to the required ANILCA 5-year status report on the Tongass National Forest:

Sigman M.J., Editor. Impacts of clearcut logging on the fish and wildlife resources of southeast Alaska. Alaska Department of Fish and Game. Habitat Division. Technical Report 85-3. November, 1985. 95p.

The fisheries section is referenced as follows:

Schwan, M., Elliott, S., and Edgington, J. Part II: The impacts of clearcut logging on the fisheries resources of southeast Alaska. In: Impacts of clearcut logging on the fish and wildlife resources of southeast Alaska. M.J. Sigman, Editor. Alaska Department of Fish and Game. Habitat Division. Technical Report 85-3. November, 1985. pp. 59-95.

Additionally, the regional overview publication, mentioned above, is referenced as follows:

Sigman, M.J. A regional overview of fish and wildlife use in southeast Alaska. Alaska Department of Fish and Game. Habitat Division. Technical Report 85-4. 15 p.

Prepared by:

Mark W. Schwan
Fishery Biologist

Approved by:

E. Richard Logan, Ph.D., Director
Division of Sport Fish

Louis S. Bandirola, Deputy Director
Division of Sport Fish

APPENDIX A.

Sample of General Catalog and Inventory Data File.

BEHM CANAL	KEA3551434130594083011015110300	3010110011100 481
BEHM CANAL	KEA4551455131055976911015110480	3010100011100 485
BEHM CANAL	KEA45514500131054977811017110630	3010110011100 521
BEHM CANAL	KEA4551440131061275911015110480	3010100011100 530
BEHM CANAL	KEA4551300131054176911015110500	3010100011100 531
BELL ISLAND	KE1555554131335173121013010960	2010110011100 543
BENZEMAN LAKE	PA14554528135001954711133410050	3011110011100 689
BERNERS	JUC35550491345808 1221152010100	201011000100 781
BETTY	PA83551730134420053920	1000000010000 225
BIG	KEB4551520131111875410	1000001000100 139
BIG	PEA4550735133083053861063010800	2011110011100 586
BIG	PEA4550735133083053841063010800	2011110011100 587
BIG	PEC3554151132424745041085010030	2000001000100 788
BIG BAY	PA04554845135191634921133110030	3010110011100 697
BIG BAY 1	PA045550301351710349211331100300020	1010001011100 39
BIG BAY 2	PA045550001351300349211331100300010	1010111011100 40
BIG SCAT	KE22553200130353080210	1000000000001 267
BIG SALT LAKE 1	CRC3553714132584059571036010310	2011110011100 439
BIG SALT LAKE 2	CRC3553805132572859571036010290	2010110011100 440
BIG SALT LAKE 3	CRC3553805132572859541036010290	2010110011100 441
BIG SALT LAKE 3	CRC35539091325630595710360102902006	2010110011100 442
BIG SALT LAKE 3	CRC35539091325630595410360102902006	2010110011100 443
BIG SALT LAKE 4	CRC35541421325425595710360102902020	2010000011100 471
BIG SALT LAKE 4	CRC35541421325425595410360102902020	2010000011100 472
BIORKA	PA05565100135320035120	1000000010000 205
BLACK BAY	SIC7574300136071227211138110100	3010111011100 729
BLACK BEAR	CRC3553254132514860970	1000000010000 229
BLACK BEAR	CRC3553254132514860940	1000000010000 230
1		
BLACK BEAR	CRC1554335132100070941071010300	2010110011100 420
BLIND	PEC3553653132491445131064410240	2000001000100 789
BLOSSOM	KEB2552410130362281511015510400	2110111011100 492
BLOSSOM	KEB2552410130362281811015510400	2110111011100 493
BLUE	SIA4570430135100031830	1000000010000 203
BOHEMIAN	PE05565600133263042440	1000001000000 55
BOSTWICK	KEB6551555131460176371012710360	2010110011100 512
BOSTWICK	KEB6551555131460176361012710360	2010110011100 513
BCULDER	BCA6560630131520052220	1000001000000 77
BRADFIELD	BCA5561342131295351441074010530	2111111011100 561
BRADFIELD	BCA5561342131295351741074010530	2111111011100 562
BRADFIELD CANAL	BCA6561312131433151041074010400	3010111011100 566
BRADFIELD N FORK	BCA55614061312716513210740105302003	2111111011100 563
BRADFIELD N FORK	BCA55614061312716514410740105302003	2111111011100 564
BROWN COVE	PE0356543013245004894108601003020120010	1000001000100 65
BROWNSON	DED1544530132153070510	1000001000000 189
BUCK 1	SI85572015135364530230	1000001000000 41
BUCK 2	SI85572050135364530230	1000001000000 42
BUCK 3	SI85572120135355028730	1000001000000 43
BUCKHORN	KEB5552708131240075330	1000000010000 256
BUCKHORN	KEB5552708131240074730	1000000010000 257
BUGGE	CRC1553940132033071630	1000000000010 282
BURNETT	PEA2550635132260046830	1000001000000 72
BUSCHMANN	KEA25506201303734836110130107502006	2011100011100 474
CABIN	CRC2552519132283761971026010420	2010110011100 399
CABIN SLOUGH	YAA25911311382745389318230101002015	2111110000100 350
CABIN SLOUGH	YAA25911311382745395218230101002015	2111110000100 351
CALDER BAY	PEA5551229133313953141054210050	3010110011100 591
CANNERY	YAA2590938138391938831823010400	2011000000100 349
CAPP	KEB3551731130524182411015510930	2010110011100 494
CARROLL	KEC5553904131212374441014510780	2110110011100 696
CARROLL INLET	KE25552215131214175371014510940	3010110011100 506
CARROLL INLET	KE25552215131214175331014510940	3010110011100 507
CASTLE	PE04553835133151443531064310210	2010111011100 627
2		
CASTLE	PE04553835133151443641064310210	2010111011100 628

APPENDIX B.

Sample of Regional Stocking File.

BLACK BEAR	1	553254	1325148	560723	RT 2	7000	DEER MTN	1
BLANK INLET	1	.	.	311006	BT 4	1200	YES BAY	1
BLUE	1	570430	1351000	38	RT 0	.	SASHIN LAKE	1
BLUE	1	552157	1303353	680611	GR 4	10000	TOLSONA	1
BLUE	2	552137	1313355	710616	RT 4	2450	WINTHROP	0
BLUE	1	570430	1351000	76	RT 0	8800	WILLAMETTE	1
BOLD ISLAND	1	5515	13125	311104	BT 4	1000	YES BAY	0
BOGT KAKE	1	.	.	710713	RT 4	5000	ENNIS. MC	2
BOGT KAKE	1	.	.	720612	RT 4	5000	ENNIS. MC	2
BORODINO	1	5622	13444	29	DV 0	.	PORT WALTER	1
BORODINO	1	5622	13444	38	RT 0	50	SASHIN LAKE	0
BOWER	1	550200	1303521	680611	GR 4	20000	TOLSONA	2
BRENTWOOD (U&L)	1	5637	13445	38	RT 0	.	SASHIN LAKE	0
BUCKHORN	1	552730	13124	650719	RT 4	3000	TEBENKOFF	2
BUGGE	1	553945	1320330	311130	BT .	1500	YES BAY	1
CALIFORNIA HEAD	3	.	.	311104	BT 4	200	YES BAY	0
CARLANA	1	552218	1314110	54	RT .	.	.	0
CARLANNA	1	552219	1314111	761002	RT 4	5000	WILLAMETTE	0
CARLANNA	1	552219	1314111	771020	RT 4	2000	ALASKA ENNIS	0
CARROLL	1	.	.	311104	BT 4	1000	YES BAY	0
CARROLL	2	5529	13121	610824	KS 5	11023	DEER MTN	0
CARROLL	2	5539	13121	620528	KS 4	114750	SOOS CR. WN	0
CARROLL	2	553900	13121	630531	KS 4	98000	SOOS CR. WN	0
CARROLL	2	5539	13121	640519	KS 4	84411	SOOS CR. WN	0
CARROLL	2	5539	13121	650607	KS 4	52500	SOOS CR. WN	0
CARROLL	2	5539	13121	660601	KS 4	31050	SOOS CR. WN	0
CHOPPER	1	552549	1313320	690701	RT 4	2500	WINTHROP	1
CIRQUE	1	551900	1312352	630703	RT 4	1000	RPCL CR. OR	0
CLAUDE	1	5556	13121	311104	BT 4	1600	YES BAY	0
CLIFF	1	5632	13446	31	CT 0	.	DEEP COVE, AK2	0
CLOUD	1	553155	1301122	720706	RT 4	2500	WINTHROP	0
CLOVER	1	5520	13215	560723	RT 2	18000	.	1
COHO COVE	1	550055	1312215	540817	RT 2	10000	.	0
CONNELL	1	552057	13141	31	BT .	.	.	0
CONNELL	1	552057	13141	550809	RT 4	100000	KODIAK	0
CRATER	1	.	.	301004	BT .	.	.	0
CRATER	1	.	.	311104	BT .	600	YES BAY	0
CRATER	1	.	.	550706	RT 2	50000	.	0
CRATER	1	554010	.	690701	RT 4	2500	WINTHROP	1
CRYSTAL (PSG)	2	.	.	730630	KS 5	1140	CHIGNIK	.
CRYSTAL (PSG)	2	.	.	740520	KS 5	134400	CARSON R, WA	.
CRYSTAL (PSG)	2	.	.	740522	SS 5	289500	BLIND SLGH	.
CRYSTAL (PSG)	2	.	.	750530	SS 5	448900	BLIND SLGH	.
CRYSTAL (PSG)	2	.	.	7506	SH 5	9500	PSG CREEK	.
CRYSTAL (PSG)	2	.	.	750610	KS 5	62000	SHIP CR	.
CRYSTAL (PSG)	2	.	.	760527	SS 5	103432	SEWARD	.
CRYSTAL (PSG)	2	.	.	760527	SS 5	150000	BLIND SLGH	.
CRYSTAL (PSG)	2	.	.	7606	SH 5	1515	FALLS CR	.
CRYSTAL (PSG)	2	.	.	760615	KS 5	4100	NAKINA, BC	.
CRYSTAL (PSG)	2	.	.	760615	KS 5	8500	CHICKAMIN R	.
CRYSTAL (PSG)	2	.	.	770517	SS 5	594118	BLIND SLGH	.
CRYSTAL (PSG)	2	.	.	7706	SH 5	630	FALLS CR	.
CRYSTAL (PSG)	2	.	.	770617	KS 5	166000	ANDREW CR	1
CRYSTAL (PSG)	2	.	.	770617	KS 5	3100	KING SAL. R	.
CRYSTAL (PSG)	2	.	.	780526	SS 5	104145	BLIND SGH	.
CRYSTAL (PSG)	2	.	.	780615	KS 5	56102	ANDREW CR	.
CRYSTAL (PSG)	2	.	.	7905	SS 5	128676	DUNCAN RIV.	.
CRYSTAL (PSG)	2	.	.	7906	KS 5	16200	ANDREW CR	.
CRYSTAL (PSG)	2	.	.	8005	SS 5	83556	DUNCAN RIV.	.
CRYSTAL (PSG)	2	.	.	8006	KS 5	13676	ANDREW CR	.
CRYSTAL (PSG)	2	.	.	8105	SS 5	569017	DUNCAN RIV.	.
CRYSTAL (PSG)	2	.	.	8106	CS 4	12800	CRYSTAL CR	.
CRYSTAL (PSG)	2	.	.	8106	KS 5	42197	ANDREW CR	.
CRYSTAL (PSG)	2	.	.	8205	SS 5	62031	DUNCAN RIV.	.
CRYSTAL (PSG)	2	.	.	8206	CS 4	14200	CRYSTAL CR	.

APPENDIX C.

Sample of Statewide Harvest Data for Southeast Alaska.

771200	350	0	79	83	0	0	0	3	428	0	0	0	0	3	0	0	0	40	
771300	492	0	9	100	62	0	20	0	0	0	0	0	0	71	0	0	0	0	
771400	36	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
771500	1380	0	21	370	123	0	39	5	0	0	0	176	0	331	0	0	0	0	
771533	3571	0	244	353	497	0	315	0	3	136	88	28	0	710	0	0	0	0	
772200	2614	0	356	644	231	0	71	0	256	0	0	0	0	28	0	0	34	6	
772300	399	0	0	100	0	0	51	0	15	0	0	12	0	274	0	0	0	0	
772400	1030	0	0	0	0	0	0	0	0	0	6	36	0	425	0	0	0	0	
772500	332	0	0	0	6	0	0	0	0	0	8	271	0	190	0	0	0	12	
773200	4211	0	462	130	0	0	258	7	70	0	0	59	0	546	0	0	116	108	
773300	1383	0	9	153	123	0	251	48	11	0	0	3	0	348	0	0	14	797	
773400	905	0	0	30	0	0	0	0	0	0	136	365	34	643	59	0	0	3	
773407	1342	0	0	38	159	0	121	0	0	0	0	0	0	1451	0	0	0	0	
773500	1964	0	0	671	153	0	176	121	0	0	0	240	0	2075	0	6558	0	0	
773508	1797	0	0	198	355	0	505	0	0	0	0	0	0	399	0	2782	0	0	
774200	4619	0	484	1427	144	0	346	9	131	6	0	9	0	292	0	0	144	212	
774210	59089	0	5066	15950	1205	0	4059	138	1651	19	0	110	0	1878	0	0	2490	1253	
774300	2597	0	78	602	182	0	239	3	67	3	0	99	0	509	0	0	57	57	
774314	14998	0	749	1753	791	0	1150	115	127	5	0	178	0	3290	0	0	305	362	
774400	2518	0	0	96	19	82	0	0	0	0	305	2340	289	634	108	0	0	12	
774416	335	0	0	0	0	0	0	0	0	0	0	708	0	65	0	0	0	0	
774436	878	0	0	0	0	99	0	0	0	0	0	518	0	351	0	0	0	0	
774500	4762	0	0	140	37	0	857	19	0	17	328	1032	0	3877	0	0	0	3	
774613	2083	0	0	100	6	0	729	37	0	17	71	113	0	1118	0	0	0	0	
775200	24178	0	1716	2531	377	0	5566	139	976	23	0	178	0	1245	0	14008	3567	2198	0
775300	6639	0	22	324	243	0	2823	2	16	20	0	48	0	1330	0	30923	68	1143	10309
775400	2637	0	0	34	0	0	101	0	0	0	1245	569	198	311	17	0	0	0	0
775417	230	0	0	0	0	0	0	0	0	0	0	226	0	0	0	0	0	0	0
775500	2657	0	0	113	192	0	189	41	0	19	189	563	0	2681	0	0	0	17	0
775518	60	0	0	0	0	0	0	0	0	0	23	19	0	0	0	0	0	0	0
775525	197	0	0	0	0	0	100	0	0	0	0	5	0	156	0	0	0	0	0
775615	284	0	0	0	0	0	0	0	0	0	0	223	0	244	0	0	0	0	0
775627	372	0	0	30	0	0	30	7	0	0	0	65	0	246	0	0	0	0	0
775630	580	0	0	84	0	0	26	2	0	8	555	0	0	77	0	0	0	0	0
776200	8055	0	1165	1281	0	0	1373	29	225	17	0	85	0	59	0	747	393	45	
776205	4726	0	448	685	33	0	406	3	108	3	0	65	0	376	0	0	167	351	
776212	636	0	29	199	0	0	132	0	13	9	0	206	0	37	0	0	26	14	
776219	3549	0	818	173	0	0	0	3	50	0	0	0	0	5	0	0	12	3	
776300	1718	0	211	169	0	0	100	3	51	5	0	189	0	127	0	0	136	57	
776304	613	0	0	216	0	0	49	0	0	0	0	14	0	19	0	0	23	0	
776311	81	0	0	44	0	0	0	0	0	0	0	17	0	0	0	0	5	0	
776400	1222	0	0	39	6	0	0	0	0	0	238	1194	0	401	0	0	0	0	
776500	4056	0	0	95	69	0	50	0	0	302	569	3051	0	1117	0	0	0	0	
776501	946	0	0	5	0	0	512	0	0	14	17	113	0	93	0	0	0	0	
776506	190	0	0	24	0	0	0	0	0	6	0	213	0	113	0	0	0	0	
776521	248	0	0	0	0	0	0	0	0	11	0	17	0	119	0	0	0	0	
776528	1172	0	0	118	0	0	119	0	0	45	5	413	0	1086	0	0	0	0	
777200	5652	0	802	948	175	0	1205	61	271	0	0	62	0	118	0	0	566	42	
777300	363	0	9	100	0	0	119	0	6	0	0	5	0	172	0	0	5	0	
777400	562	0	0	0	0	0	0	0	0	5	119	379	0	96	0	0	0	0	
777500	4249	0	0	644	19	0	211	44	0	251	998	699	0	633	0	0	0	0	
777522	459	0	0	31	6	0	6	0	0	73	90	150	0	133	0	0	0	0	
777634	758	0	0	194	125	0	18	0	0	28	0	404	0	193	0	0	0	0	
778200	4598	0	793	786	119	0	1120	71	390	49	0	218	0	631	0	0	26	716	
778202	11894	0	1316	968	44	0	3373	85	288	9	0	136	0	22	0	0	59	529	
778203	1272	0	321	244	0	0	372	9	72	0	0	0	0	6	0	0	0	20	
778209	6909	0	1050	1036	31	0	1928	36	261	9	0	5	0	17	0	0	113	263	
778231	2818	0	338	186	25	0	633	22	79	0	0	57	0	14	0	16	85	572	
778235	9730	0	691	771	39	0	2087	33	199	8	0	6	0	45	0	0	532	1937	
778238	186	0	35	28	0	0	60	3	3	0	0	0	0	23	0	0	0	0	
778300	4353	0	128	191	38	0	1747	9	58	11	0	269	0	164	0	0	19	314	

APPENDIX D.

Sample of Value Comparison Unit (VCU) Rating File.

63130
64232
65130
66232
67130
68433
69433
70433
71322
72433
73433
74433
75332
764120010
77423
78130
79322
80433
81433
82422
83432
84422
85433
86433
87422
88433
89422
902110010
91133
92133
93000
94333
95333
96333
97333
98333
99333
100120
101130
102120
103130
104120
105320
106223
1073220000
108233
1092220000
1102220000
1112220000
112333
113333
114323
115322
116323
1173220001
118333
119323
120322
1213330000
122333
123333
1242220001
1253330000
1263220000
127332

APPENDIX E.

Samples of Opening Menus for Database.

```
=====
SPORT FISH DATABASE MENU
=====
THE FOLLOWING PROCEDURES ARE AVAILABLE:
GENERAL LAKE AND STREAM INVENTORY DATA      = 1
ADDING NEW RECORDS TO THE LAKE/STREAM FILE    = 2
REGIONAL SPORT FISH DISTRIBUTION              = 3
REGIONAL STOCKING INFORMATION                 = 4
ADDING NEW RECORDS TO THE STOCKING FILE        = 5
SPORT FISHING HARVEST AND EFFORT DATA (MILLS) = 6
EXIT TO <.> DBASE PROMPT                     = 7
=====
PRESS THE NUMBER CORRESPONDING TO YOUR SELECTION
```

```
SPORT FISH DIVISION
DATABASE SYSTEM
*****
THE FOLLOWING INFORMATION IS CURRENTLY ON FILE:

1) GENERAL LAKE AND STREAM INFORMATION
2) REGIONAL LAKE AND STREAM STOCKING DATA
3) LOCATIONS OF USFS RECREATIONAL CABINS
4) RATINGS OF VCU's
5) SPORT FISH HARVEST DATA (Mills' Postal Survey)
*****

To obtain desired information, or exit to DOS, pick a number.
(1)=GENERAL (2)=STOCKING (3)=CABINS (4)=VCUs (5)=HARVEST (6)=EXIT TO DOS
```

ENTER SELECTION NUMBER?

APPENDIX F.

Samples of Custom Data Entry Screens.

DATA ENTRY FORM FOR GENERAL STREAM AND LAKE INFORMATION
(use UPPER case, please)
Current Record Number: 8
ENTER NAME (HIT RETURN TO EXIT)
ENTER WATER NAME CODE
(1=LAKE,2=STREAM,3=LOCATION)
ENTER MAP REF
ENTER LATITUDE (DDMMSS)
ENTER LONGITUDE (DDMMSS)
ENTER VCU (Enter Values for all Rec)
(Select Nearby VCU for non Forest sites)
ENTER LUD (use nos.>4 for ownership)
(5=Nat Park;6=City;7=State;8=Private)
ENTER ANADROMOUS STREAM NUMBER, OR 0
SPECIES OCCURANCE. ENTER 1 IF PRESENT, 0 IF ABSENT
KS SS RS PS CS CT KO
RT SH DV BT GR
ENTER THE NUMBER OF USFS CABINS PRESENT
ENTER IDENTIFICATION NUMBER FOR RECORD

CUSTOM DATA ENTRY FORM FOR STOCKING FILE
(use UPPER case; enter . for missing values) Current Rec No: 14
ENTER THE NAME OF THE LAKE OR STREAM (HIT RETURN TO EXIT):
ENTER THE WATER TYPE CODE (1=LAKE; 2=STREAM):
ENTER LATITUDE (DDMMSS):
ENTER LONGITUDE (DDMMSS):
ENTER THE DATE OF STOCKING (YYMMDD):
ENTER THE SPECIES (USE STANDARD TWO LETTER SPECIES CODE):
ENTER THE CODE FOR SIZE OF FISH (1=GREEN EGG; 2=EYED EGG;
3=SAC FRY; 4=FRY; 5=SMOLT; 6=CATCHABLE; 7=FINGERLING):
ENTER THE NUMBER OF FISH STOCKED:
ENTER THE SOURCE OF FISH IF KNOWN (USE NAME OF LAKE OR
STREAM FOR WILD STOCKS; HATCHERY FOR ARTIFICIAL STOCKS):
SUCCESS (0=NOT EVALUATED; 1=SUCCESSFUL; 2=UNSUCCESSFUL):

APPENDIX G.
Samples of Data Outputs.

ROCKFISH SPORT HARVEST

AREA	1980	1981	1982	1983	1984	AVE
YAKUTAT	0	44	52	105	146	69
GL. BAY	43	259	168	409	85	192
HAINES	319	320	1583	168	558	689
JUNEAU	6724	5649	6141	7859	5978	6470
SITKA	8481	11337	13027	9855	6375	9915
NSE	15567	18609	20971	18396	13142	17337
PSG/WGL	2841	1937	1581	1008	2265	1926
POW	4968	4544	8027	12040	5197	6955
KETCH	18415	20581	21023	18824	16295	19027
SSE	26224	27062	30631	31872	23757	27909
TOTAL	41791	45671	51602	50268	36899	45246

STREAM AND LAKE INVENTORY FORM

STREAM: NAHA

MAP REFERENCE: KEC5

LATITUDE:553534 N. LONGITUDE:1313533 W. ANAD. NO.:1019010500

THIS WATER IS ACCESSIBLE TO ANADROMOUS FISHES.

FISH SPECIES PRESENT: SS RS PS CS CT RT SH DV

THIS WATER IS LOCATED IN THE TONGASS NATIONAL FOREST.

THERE IS/ARE 6 RECREATIONAL CABIN(S) PRESENT.

VCU	LUD	SPORT FISH RANK	FHIP CLASS
742	2	1	1

NAME	YEAR	SPECIES	SIZE	SOURCE	RESULTS
ANTLER	62	GR	FRY	GLENNALLEN	SUCCESSFUL
ANTLER	64	GR	EYED EGG	GLENNALLEN	SUCCESSFUL
ANTLER	65	GR	FRY	GLENNALLEN	SUCCESSFUL
ANTLER	66	GR	FRY	GLENNALLEN	SUCCESSFUL

THERE ARE NO MORE MATCHING RECORDS.

DO YOU WANT TO KNOW SOMETHING ABOUT ANOTHER LAKE OR STREAM?
ENTER (Y/N)

APPENDIX H.

Sample of an Application Program in dBASE III.
This Program Creates an Opening Menu for Data Selection.

```

SET HEADING OFF
SET SAFETY OFF
SET TALK OFF
SET ECHO OFF
STORE 1 TO MARK
DO WHILE MARK=1
CLEAR
@ 2,1 SAY "=====
=====
@ 4,24 SAY "SPORT FISH DATABASE MENU"
?
? " =====
? "
? "          THE FOLLOWING PROCEDURES ARE AVAILABLE:"
? "
? "          GENERAL LAKE AND STREAM INVENTORY DATA          = 1"
? "          ADDING NEW RECORDS TO THE LAKE/STREAM FILE        = 2"
? "          REGIONAL SPORT FISH DISTRIBUTION                   = 3"
? "          REGIONAL STOCKING INFORMATION                      = 4"
? "          ADDING NEW RECORDS TO THE STOCKING FILE            = 5"
? "          SPORT FISHING HARVEST AND EFFORT DATA (MILLS)     = 6"
? "          EXIT TO <.> dBASE PROMPT                           = 7"
? "=====
? "

WAIT '          PRESS THE NUMBER CORRESPONDING TO YOUR SELECTION' TO SELECTION
CLEAR
IF SELECTION="1"
DO CATTEST
WAIT
ENDIF
IF SELECTION="2"
DO SURVEY
WAIT
ENDIF
IF SELECTION="3"
DO FISHON
WAIT
ENDIF
IF SELECTION="4"
DO SEESTOCK
WAIT
ENDIF
IF SELECTION="5"
DO FISHMOVE
WAIT
ENDIF
IF SELECTION="6"
DO HARVEST
ENDIF
IF SELECTION="7"
RETURN
ENDIF
ENDDO

```

APPENDIX I.

Sample Programs for Custom Screen Data Entry and File Sorting.

```
@ 1.8 SAY "DATA ENTRY FORM FOR GENERAL STREAM AND LAKE INFORMATION"
@ 2.20 SAY "(use UPPER case, please)"
@ 3.15 SAY "Current Record Number:"
@ 3.40 SAY RECNO()
@ 4.5 SAY "ENTER NAME (HIT RETURN TO EXIT)      " GET NAME
@ 5.5 SAY "ENTER WATER NAME CODE              " GET CODE
@ 6.5 SAY "(1=LAKE,2=STREAM,3=LOCATION)"
@ 7.5 SAY "ENTER MAP REF                      " GET MAP
@ 8.5 SAY "ENTER LATITUDE (DDMMSS)           " GET LAT
@ 9.5 SAY "ENTER LONGITUDE (DDMMSS)          " GET LONG
@ 10.5 SAY "ENTER VCU (Enter Values for all Rec)" GET VCU
@ 11.5 SAY "(Select Nearby VCU for non Forest sites)"
@ 12.5 SAY "ENTER LUD (use nos.>4 for ownership)" GET LUD
@ 13.5 SAY "(5=Nat Park;6=City;7=State;8=Private)"
@ 15.5 SAY "ENTER ANADROMOUS STREAM NUMBER, OR 0" GET NUMBER
@ 17.5 SAY "    SPECIES OCCURANCE. ENTER 1 IF PRESENT, 0 IF ABSENT"
@ 18.5 SAY "KS" GET KS
@ 18.15 SAY "SS" GET SS
@ 18.25 SAY "RS" GET RS
@ 18.35 SAY "PS" GET PS
@ 18.45 SAY "CS" GET CS
@ 18.55 SAY "CT" GET CT
@ 18.65 SAY "KO" GET KO
@ 19.10 SAY "RT" GET RT
@ 19.20 SAY "SH" GET SH
@ 19.30 SAY "DV" GET DV
@ 19.40 SAY "BT" GET BT
@ 19.50 SAY "GR" GET GR
@ 21.5 SAY "ENTER THE NUMBER OF USFS CABINS PRESENT      " GET CA
@ 22.5 SAY "ENTER IDENTIFICATION NUMBER FOR RECORD      " GET REC
```

```
SET BELL OFF
SET TALK OFF
USE SURVEY
SET FORMAT TO SURVEY
APPEND
SORT ON NAME TO WATSORT
CLOSE DATABASES
ERASE SURVEY.DBF
RENAME WATSORT.DBF TO SURVEY.DBF
CLEAR
RETURN
```